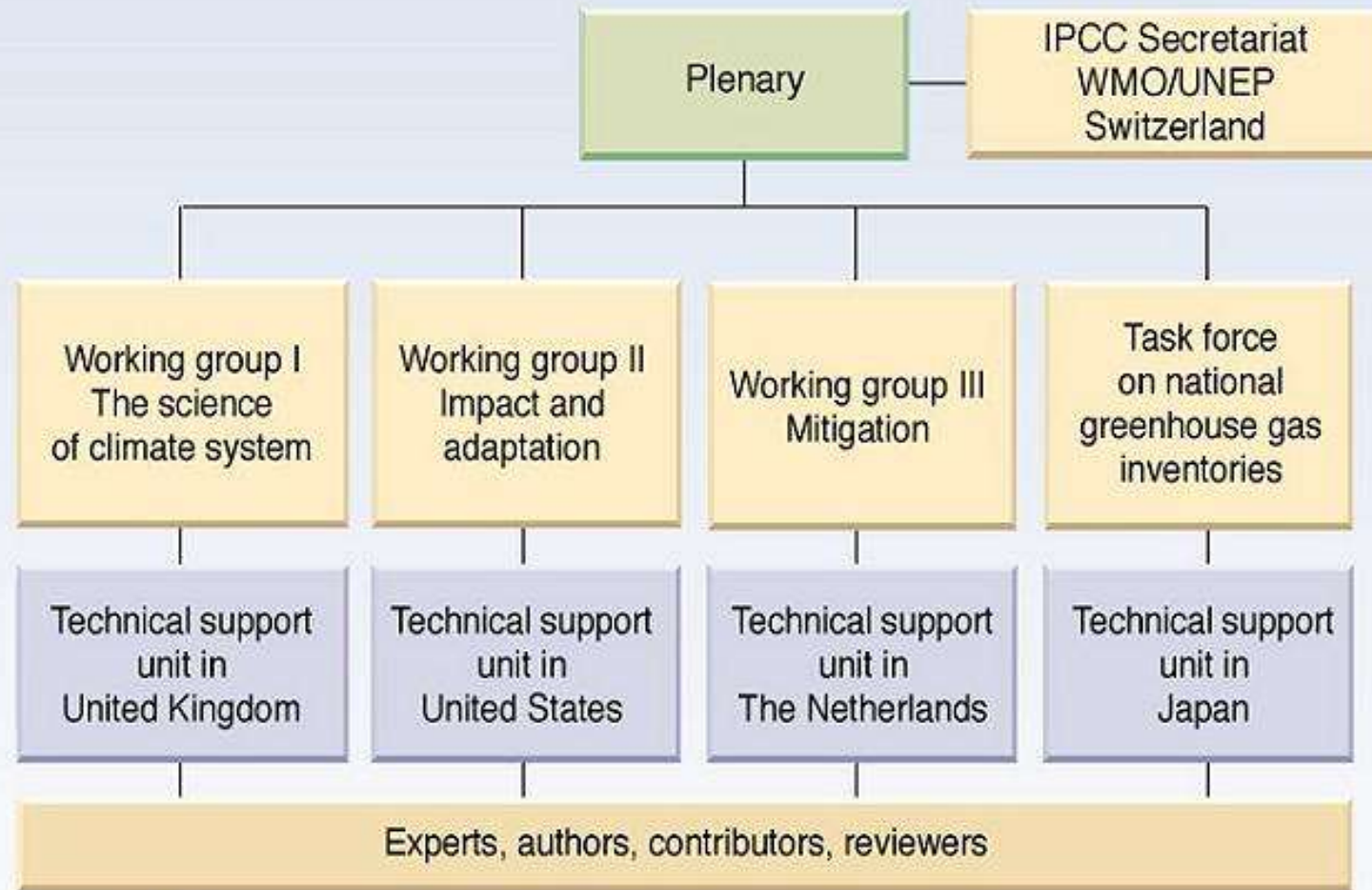


THE CLIMATE CHANGE TREATIES

PROF. TSEMING YANG

6-5-2018

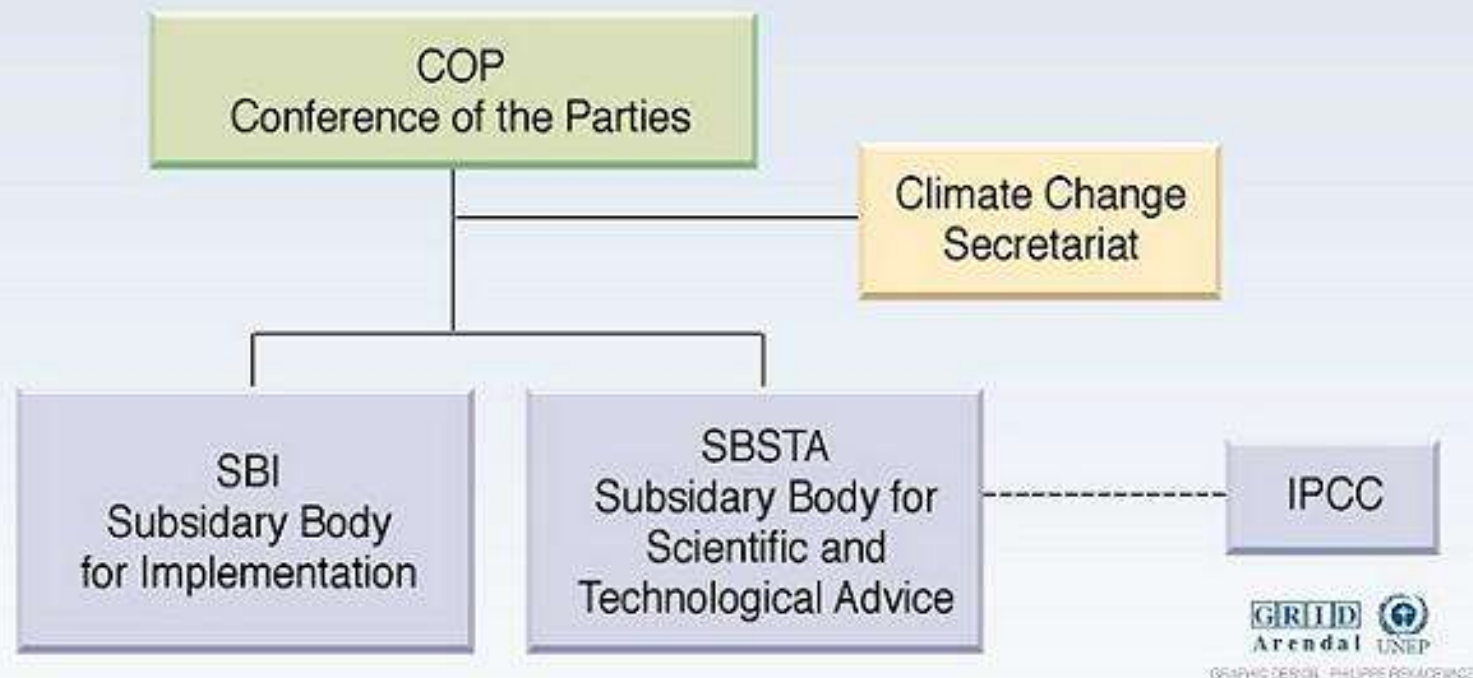
Intergovernmental Panel on Climate Change (IPCC)



An Outline of the UNFCCC

1. Definitions
2. Objective
3. Principles (Future Gen., C&DR, Precaution, SD, Trade)
4. Commitments
5. Research & Observ.
6. Educ., Training, Public Aw.
7. Conf. of Parties
8. Secretariat
9. SBSTA
10. Subs. B. for Implem.
11. Financial Mech.
12. Communic. of Info re Implementation
13. Resol. Of Q. Re Implem. - Multilat. Consult. Process
14. Dispute Settlement
15. Amendments
16. Annexes
17. Protocols
18. Right to Vote
19. Depositary
20. Signature
21. Interim Arrangements
22. Ratification
23. Entry into Force
24. Reservations
25. Withdrawal
26. Authentic Texts

The UN Convention on Climate Change (UNFCCC)



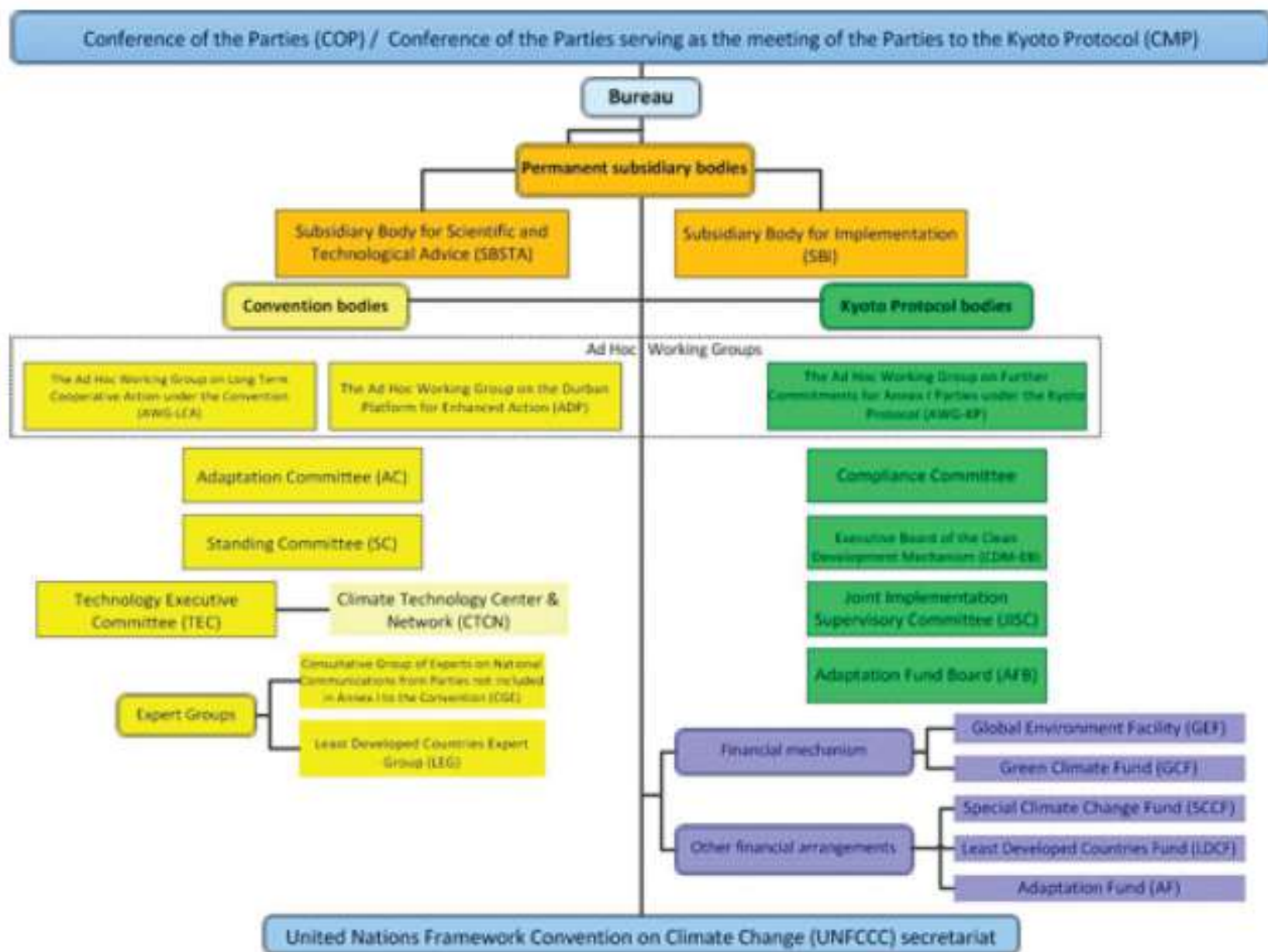
What are the Obligations in the UNFCCC

- Article 4 - Main Substantive Commitments
 - ▣ other commt., like financing, tech transf., etc.
- 3 sets of obligations
- Art 4(1) (all parties) -Scientific/policy, etc. Research & Information gathering/exchange, policy/program development, education, sustainable development/impact assessments
- Art. 4(2) (OECD + EIT) – “pledge & review”, return to 1990 levels by 2000
- Art. 4(3) (OECD) - “new and additional” financing for “agreed incremental costs”

1997 KYOTO PROTOCOL

An Outline of the Kyoto Protocol

1. Definitions
2. General Policies/Measures to fulfill Annex B
3. Annex B Emission Limits, Commitment Period
4. Joint Fulfillment Agreements (EU Bubble)
5. GHG Estimation Methodology
6. Joint Implementation (Off-set)
7. Annual National Communications/Inventories
8. Expert Review Teams
9. Periodic Protocol Review
10. Reaffirmation of FCCC Art. 4
11. Additional Financing by Industrialized Countries
13. Clean Development Mechanism (Off-set)
14. Meeting of the Parties (MOP)
15. Secretariat
13. SBSTA & SBI
14. Modif. Multilat. Consult. Process (FCCC art. 13)
15. Emission Trading
16. Non-Compliance Mechanism
17. Dispute Settlement
18. Amendments
19. Annexes
20. Voting
21. Depositary
22. Ratification
23. Entry into Force
24. Reservations
25. Withdrawal
26. Authentic Texts



1997 Kyoto Protocol Key Aspects

- Binding Emissions Reduction Commitments
 - ▣ Annex B
- Only Emissions Limitations for Industrialized Countries
 - ▣ Developing countries have no binding emissions limits
- Flexibility Mechanisms
 - ▣ Implement Comprehensive Approach
 - CO₂, CH₄, NO₂, HFCs (hydrofluorocarbons), PFCs (perfluorocarbons), SF₆ (sulphur hexafluoride)
 - ▣ 5 year budget periods
 - ▣ Flexibility through Market Mechanisms

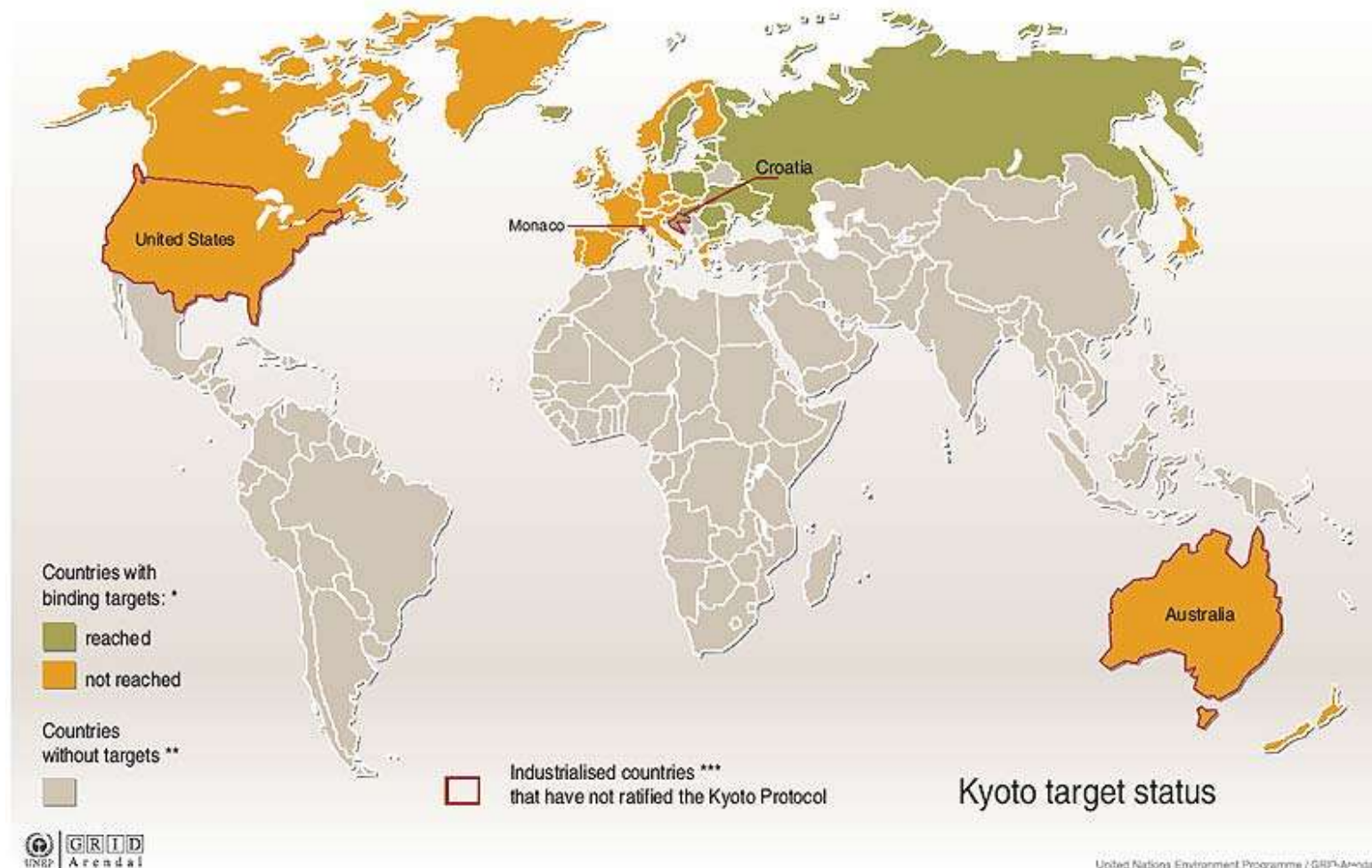
Annex B Emissions Reduction Targets

- Annex B sets out limits on greenhouse gas (GHG) emissions of industrialized economies as a percentage of 1990 emissions
 - ▣ overall, 5.3% reduction from 1990 base line
 - ▣ but individual reduction targets vary
 - ▣ US has 7% reduction commitment, EU 8%
- To be achieved by 2008-2012 commitment period

Annex B Quantified Emission Limitations

Australia	108	Liechtenstein	92
Austria	92	Lithuania [FNa1]	92
Belgium	92	Luxembourg	92
Bulgaria [FNa1]	92	Monaco	92
Canada	94	Netherlands	92
Croatia [FNa1]	95	New Zealand	100
Czech Republic [FNa1] 92		Norway	101
Denmark	92	Poland [FNa1]	94
Estonia [FNa1]	92	Portugal	92
European Community 92		Romania [FNa1]	92
Finland	92	Russian Federation [FNa1]	100
France	92	Slovakia [FNa1]	92
Germany	92	Slovenia [FNa1]	92
Greece	92	Spain	92
Hungary [FNa1]	94	Sweden	92
Iceland	110	Switzerland 92	
Ireland	92	Ukraine [FNa1]	100
Italy	92	United Kingdom	92
Japan	94	United States of America	93
Latvia [FNa1]	92		

Kyoto Annex B Countries (OECD & EITs)



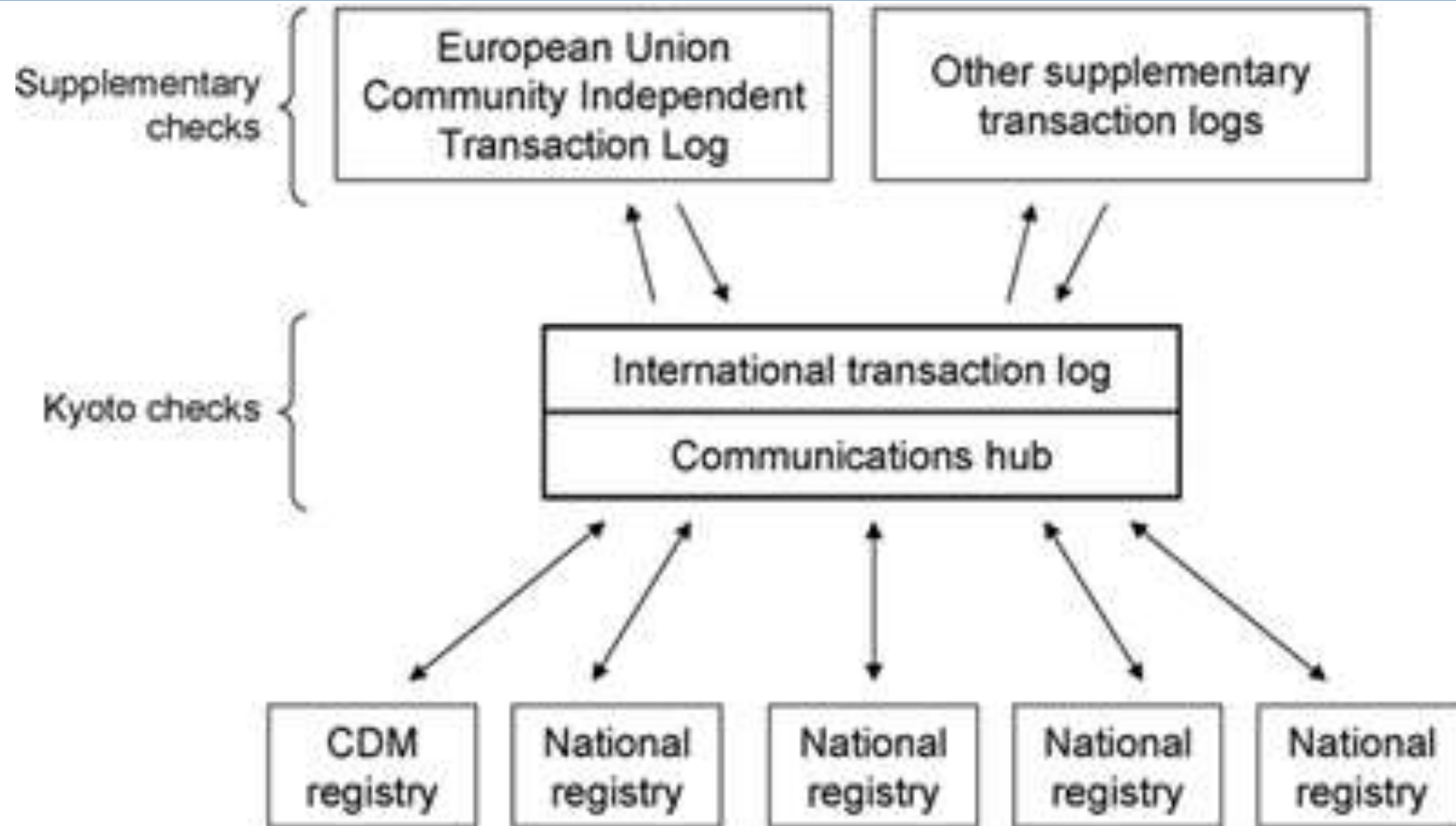
Source: UNFCCC, December 16 2004.

* "Annex B countries" of the Protocol, ** "Non-Annex I countries" of the Convention, *** "Annex I countries" of the Convention.

Market Mechanisms

- Facilitates multi-country cooperation in achieving emissions reductions
- Allow reduction of emissions in one country and selling/trading of the credit to another country for use
- EU “Bubble” (Art. 4)
 - ▣ overall multi-country cooperation in achieving emissions reductions
 - ▣ between Annex I countries, not necessarily EU only
 - ▣ “agreement to fulfill their commitments jointly,” “shall notify the secretariat of terms of agreement”
- Joint Implementation (Art. 6)
 - ▣ Project-specific, Annex I only (“transfer to . . . any party emission reduction units resulting from projects aimed at reducing emissions”)
 - ▣ Approval of parties required
 - ▣ Reduction must be “additional to any that would otherwise occur”
 - ▣ Compliance with article 5 & 7 required
 - ▣ Supplemental use only for meeting Annex B

Tracking Emission Credits (art. 17)



Source: UNFCCC 2007

Article 12 – Clean development Mechanism

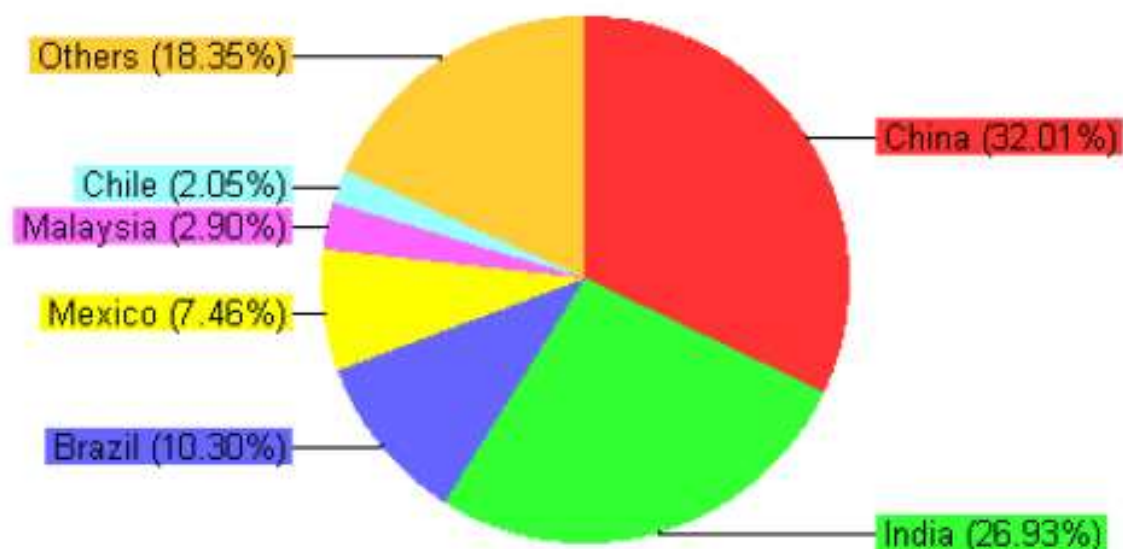
- Project specific, like JI (Art. 6)
- Non-Annex I parties (developing countries) to benefit
 - ▣ Voluntary participation of parties
- Supervised by CDM Executive Board
 - ▣ CDM Executive Board creates regulations/approves projects & credits
- Banking of credits started in 2000 (well before 2008)
 - ▣ CERs (Certified Emissions Reductions) can be generated beginning in 2000 for use in 2008-12
- Certified emission reduction can be used by Annex I
 - ▣ certified emissions reductions are NEW Emissions credits outside of Annex B limits

The Purpose & Mechanics of the CDM

- Help compliance with Annex B reductions
- Promote sustainable development for developing world
- Must achieve “real, measurable & long-term benefits” for mitigation
- “Additionality” compared to absence of project
 - ▣ “reductions additional to any that would occur in the absence of the certified activity”

Where are the Projects Hosted? (by number of projects)

Registered project activities by host party. Total: 1,515



Mechanism	Cooperate with Developing Countries	Cooperate with Annex 1 Countries	Project-Based Credits	General Trading	Additionality?
Art. 4 EU Bubble		X		X	
Art. 6 Joint Implementation		X	X		X
Art. 12 Clean Development Mech.	X		X		X
Art. 17 Emission Trading		X		X	

What are the pros and
cons of Pollution Markets?



But Kyoto Commitments Expired in 2012 . . .

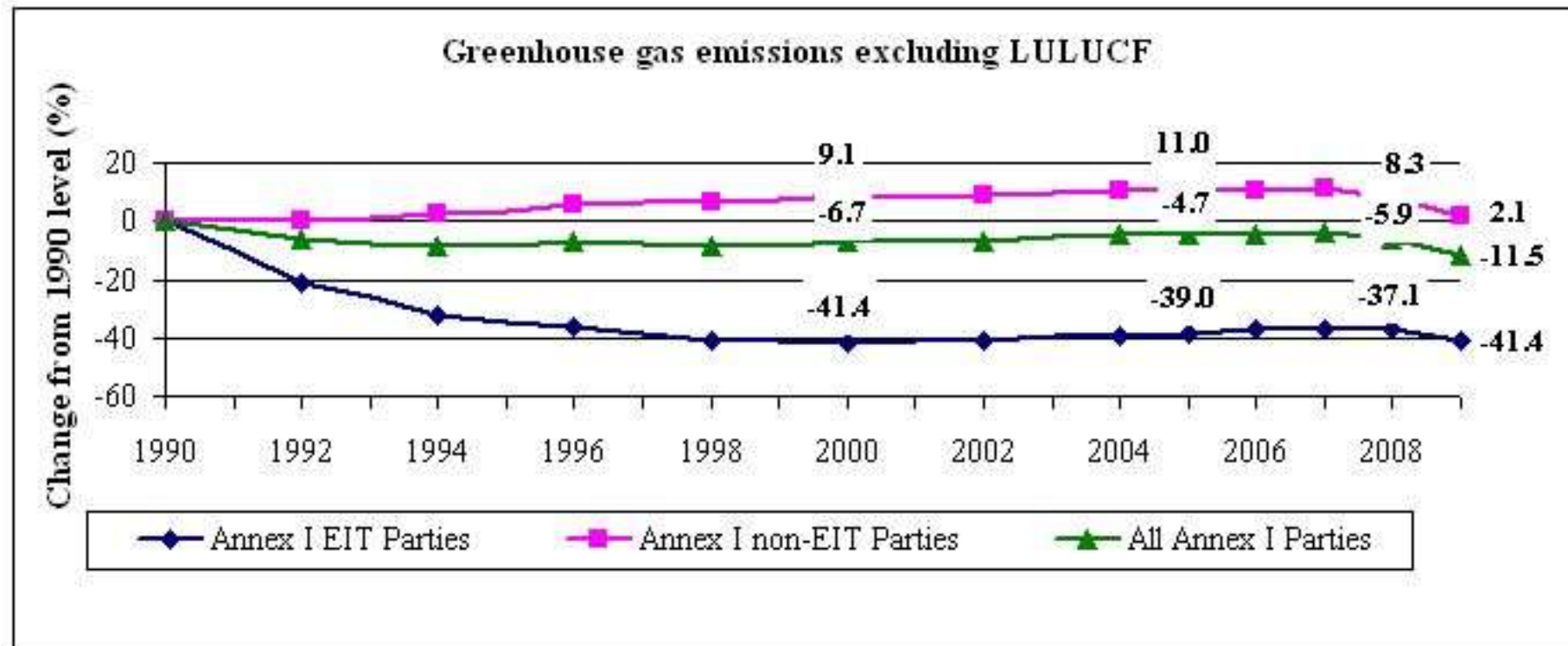
DOHA AGREEMENT

Copenhagen Accord: A Political Pact

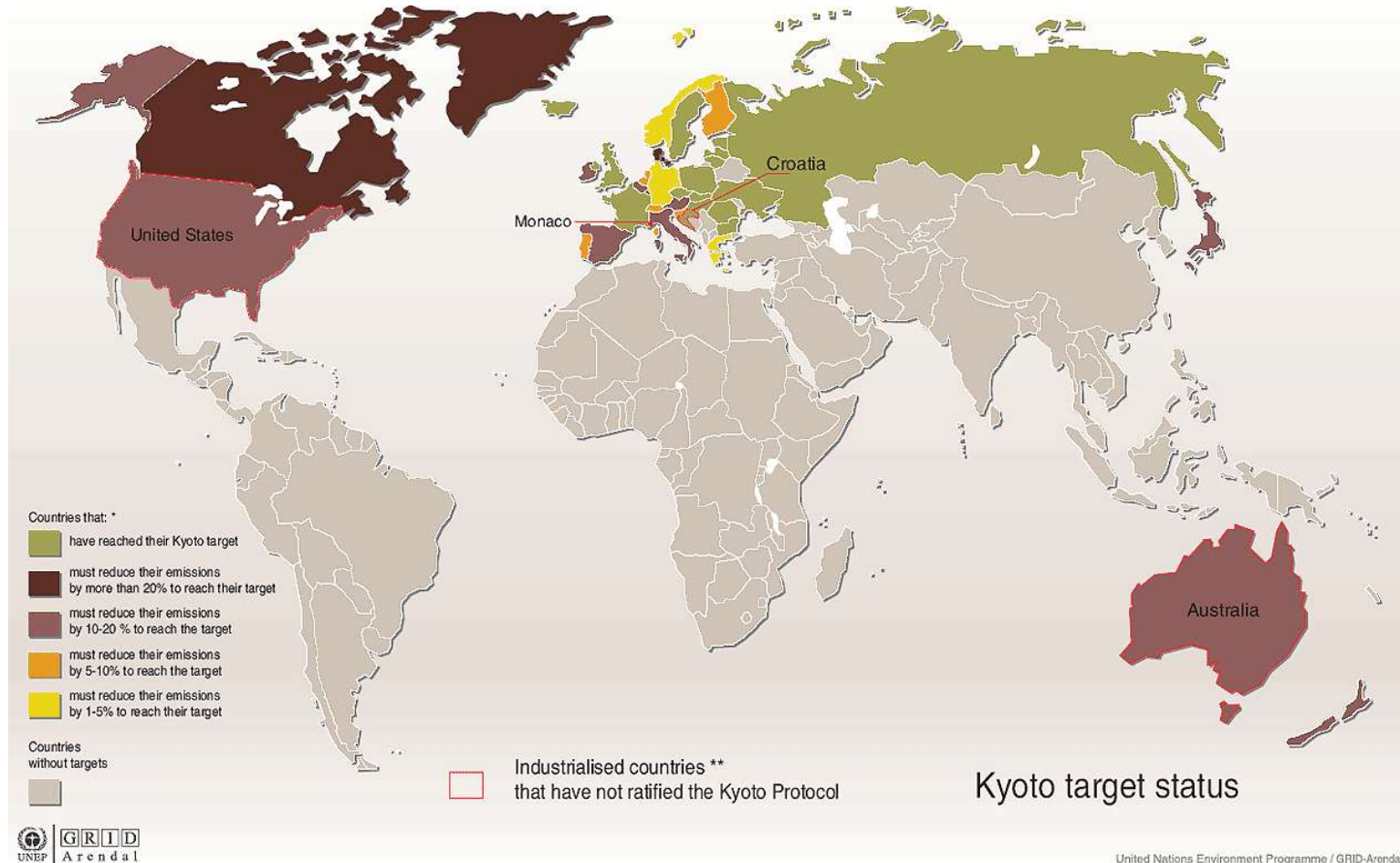
	Country	Reduction Pledges by 2020	baseline
Annex I	USA	-17%	2005
	Russia	-15% to -25%	1990
	Japan	-25%	1990
	EU	-20% to -30%	1990
	Canada	-17%	2005
	Australia	-5% up to -15% or -25%	2000
Non-Annex I	Brazil	-36.1 % to -38.9%	2020 BAU
	China	-40% to -45% emissions intensity	2005
	India	-20% to -25% emissions intensity (excluding agriculture)	2005
	Indonesia	-26% to -41 %	2020 BAU
	South Korea	-4%*	2005
	Mexico	-30%	2020 BAU
	South Africa	-34%	2020 BAU

Source: US Chamber of Commerce 2010

1990-2009 trends for all Annex I Parties (to Convention)



Kyoto Target Status



Source: UNFCCC, February 8, 2005

* "Annex B countries" of the Protocol, ** "Annex I countries" of the Convention

Please select Sector or Sub-sector, Gas and Inventory Year

Total emissions including LULUCF/LUCF



Aggregate GHGs



Base Year-2010 growth, %



Print Link



-148.08%

0.00%

147.52%



No data

Gg CO₂ eq. change, Base Year to 2010 ?

All Annex I countries - Total emissions including LULUCF/LUCF

Aggregate_GHGs, Gg CO₂ eq., change, Base Year to 2010

Sort: [by name](#) | [by value descending](#)

1	Latvia	-148.08%	16	Croatia	-21.50%	31	Switzerland	8.45%
2	Lithuania	-78.82%	17	Denmark	-18.74%	32	United States of America	8.57%
3	Romania	-63.88%	18	Monaco	-18.52%	33	Ireland	8.89%
4	Ukraine	-59.85%	19	European Union (27) 	-18.78%	34	Iceland	12.49%
5	Russian Federation	-54.82%	20	Slovenia	-12.58%	35	Greece	12.88%
6	Bulgaria	-53.78%	21	European Union (15) 	-11.35%	36	Australia	13.62%
7	Norway	-49.06%	22	Luxembourg	-10.64%	37	Portugal	14.15%
8	Estonia	-46.81%	23	France	-8.61%	38	Austria	18.85%
9	Belarus	-46.42%	24	Italy	-8.25%	39	Spain	23.98%
10	Hungary	-42.88%	25	Belgium	-7.48%	40	Canada	46.35%
11	Poland	-35.20%	26	Finland	-3.98%	41	Malta	50.23%
12	Slovakia	-35.11%	27	Japan	-0.99%	42	New Zealand	59.45%
13	Czech Republic	-30.47%	28	Netherlands	-0.91%	43	Turkey	147.52%
14	United Kingdom	-23.47%	29	Sweden	2.17%			
15	Germany	-21.72%	30	Liechtenstein	2.25%			

Doha Amendments to Kyoto Protocol

- 8-year second commitment period, starting 1-1-2013 (to 2020)
- Accounting rules of Protocol preserved
- Market mechanisms (JI, CDM, IET) will continue
- Surplus assigned amount units (AAUs) to be carried over without limit from the first to the second commitment period, but restrictions on use and quantitative limits on how many of these units may be acquired from other Parties.
- Review of long-term commitments, to conclude by 2015
- Nitrogen Tri Fluoride added to GHG list

A. Annex B to the Kyoto Protocol

The following table shall replace the table in Annex B to the Protocol:

1	2	3	4	5
Party	Quantified emission limitation or reduction commitment (2008–2012) (percentage of base year or period)	Quantified emission limitation or reduction commitment (2013–2020) (percentage of base year or period)	Reference year ¹	Quantified emission limitation or reduction commitment (2013–2020) (expressed as percentage of reference year) ¹
Australia	108	99.5	2000	98
Austria	92	80 ⁴	NA	NA
Belarus ^{5*}		88	1990	NA
Belgium	92	80 ⁴	NA	NA
Bulgaria*	92	80 ⁴	NA	NA
Croatia*	95	80 ⁶	NA	NA
Cyprus		80 ⁴	NA	NA
Czech Republic*	92	80 ⁴	NA	NA
Denmark	92	80 ⁴	NA	NA
Estonia*	92	80 ⁴	NA	NA
European Union	92	80 ⁴	1990	NA
Finland	92	80 ⁴	NA	NA
France	92	80 ⁴	NA	NA
Germany	92	80 ⁴	NA	NA
Greece	92	80 ⁴	NA	NA
Hungary*	94	80 ⁴	NA	NA
Iceland	110	80 ⁸	NA	NA
Ireland	92	80 ⁴	NA	NA
Italy	92	80 ⁴	NA	NA
Kazakhstan*		95	1990	95
Latvia*	92	80 ⁴	NA	NA

1	2	3	4	5	6
Party	Quantified emission limitation or reduction commitment (2008–2012) (percentage of base year or period)	Quantified emission limitation or reduction commitment (2013–2020) (percentage of base year or period)	Reference year ¹	Quantified emission limitation or reduction commitment (2013–2020) (expressed as percentage of reference year) ¹	Pledges for the reduction of greenhouse gas emissions by 2020 (percentage of reference year) ²
Liechtenstein	92	84	1990	84	–20%–30% ⁹
Lithuania*	92	80 ⁴	NA	NA	
Luxembourg	92	80 ⁴	NA	NA	
Malta		80 ⁴	NA	NA	
Monaco	92	78	1990	78	–30%
Netherlands	92	80 ⁴	NA	NA	
Norway	101	84	1990	84	–30% to –40% ¹⁰
Poland*	94	80 ⁴	NA	NA	
Portugal	92	80 ⁴	NA	NA	
Romania*	92	80 ⁴	NA	NA	
Slovakia*	92	80 ⁴	NA	NA	
Slovenia*	92	80 ⁴	NA	NA	
Spain	92	80 ⁴	NA	NA	
Sweden	92	80 ⁴	NA	NA	
Switzerland	92	84.2	1990	NA	–20% to –30% ¹¹
Ukraine*	100	76 ¹²	1990	NA	–20%
United Kingdom of Great Britain and Northern Ireland	92	80 ⁴	NA	NA	
Party	Quantified emission limitation or reduction commitment (2008–2012) (percentage of base year or period)				
Canada ¹³	94				
Japan ¹⁴	94				
New Zealand ¹⁵	100				
Russian Federation ^{16*}	100				

Abbreviation: NA = not applicable.

* Countries that are undergoing the process of transition to a market economy.

All footnotes below, except for footnotes 1, 2 and 5, have been provided through communications from the respective Parties.

2015 Paris Climate Agreement



Status

- Entered into force on Nov. 4, 2016
 - ▣ Entry into Force: 55 Parties, 55% of global GHG emissions
 - ▣ Crossed entry-into-force threshold requirements on October 5, 2016
- Currently 176 ratifications (197 UNFCCC Parties)

Last Minute Drama - Shall vs. Should



United Nations
Framework Convention on
Climate Change

FCCC/CP.2015.L.9

Date: Limited
17 December 2015
Original: English

Conference of the Parties
Twenty-first session
Paris, 30 November to 11 December 2015
Agenda Item 5(b)
Durban Platform for Enhanced Action (decision 1/CP.17)
Adoption of a protocol, another legal instrument, or an
agreed outcome with legal force under the Convention
applicable to all Parties

ADOPTION OF THE PARIS AGREEMENT

Proposal by the President

current nationally determined contribution and reflect its highest
different responsibilities and respective capabilities, in the light
Shall?
Developed country Parties shall continue taking the lead by up-
reduction targets. Developing country Parties should continue
encouraged to move over time towards economy-wide emission
Should?
different national circumstances.

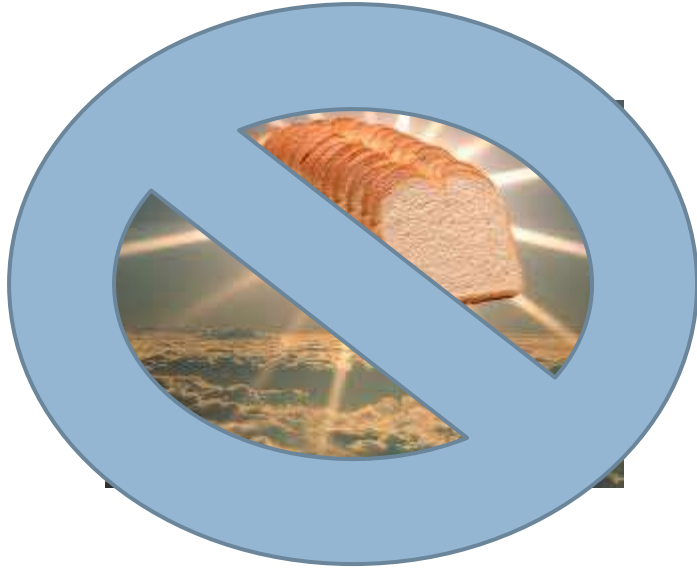
different national circumstances.

4. Developed country Parties shall continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances.

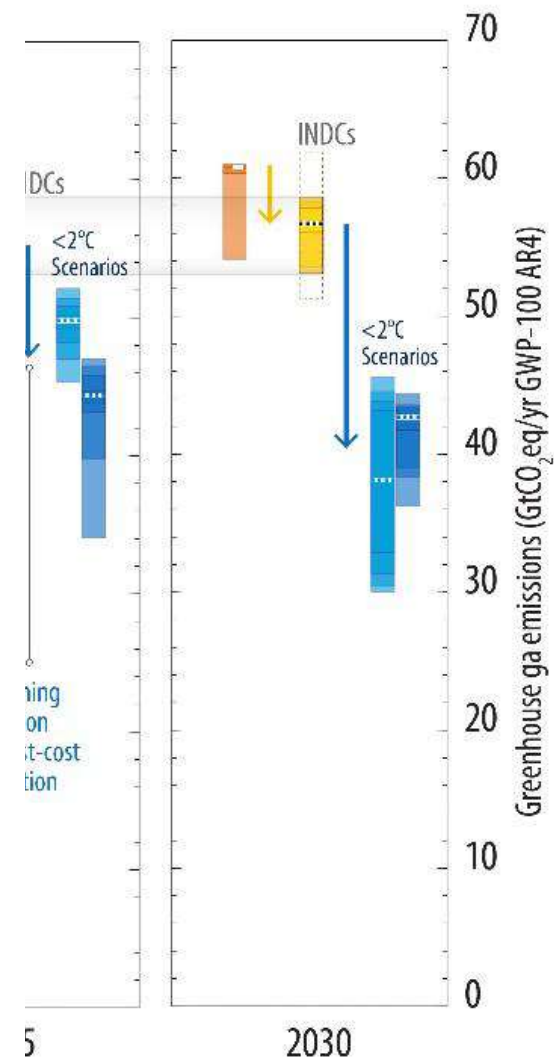
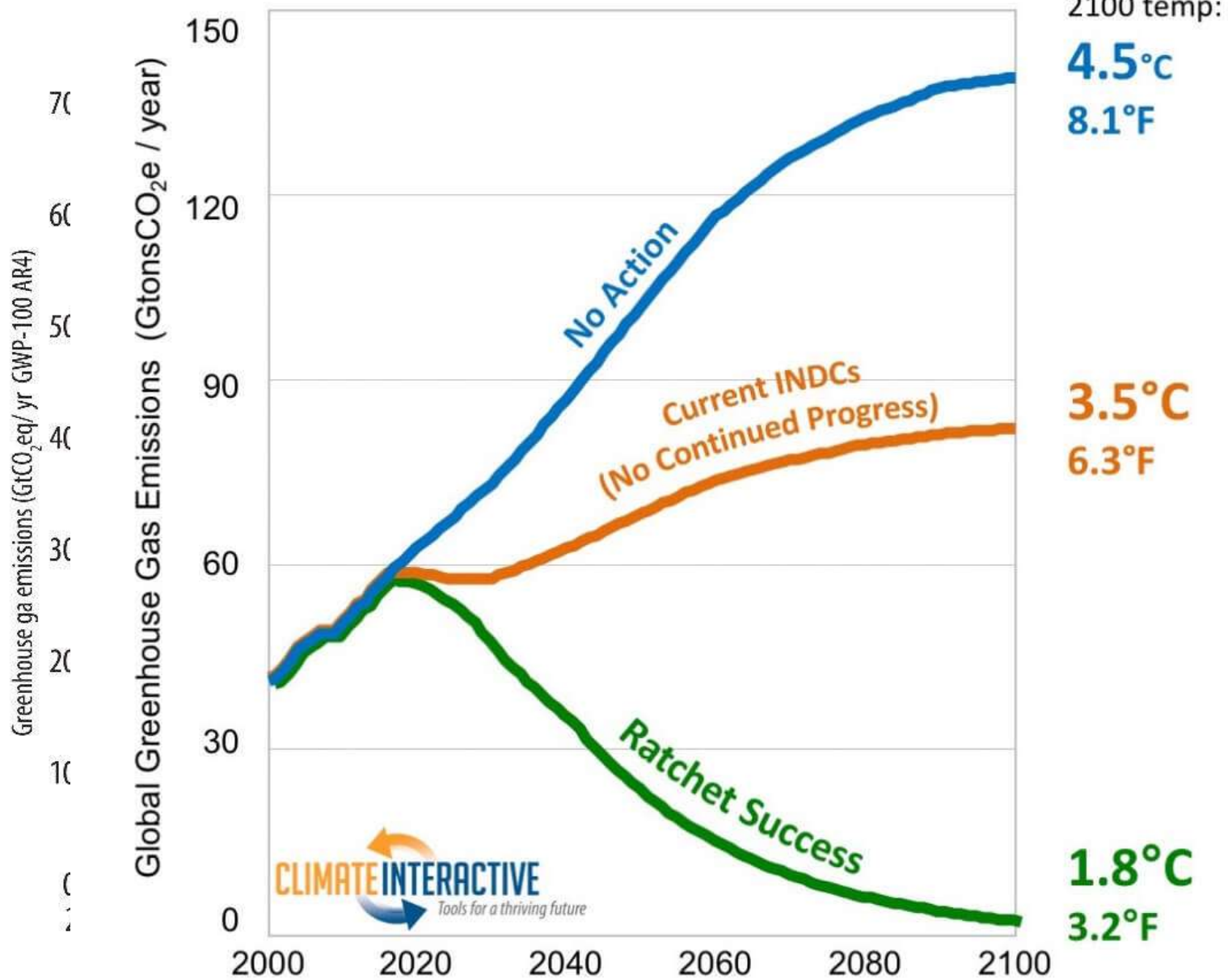
The one-sentence verdict?



How good is it?



WI



The Paris Agreement

- 29 Articles

The Paris Agreement

- Art. 2 - 2°C limit
- Art. 4 - NDCs
- Art. 5 – REDD+
- Art. 6 – Cooperative Implementation (ITMO - Markets?)
- Art. 7 – Adaptation
- Art. 8 – Loss & Damage
- Art. 9 – Financing
- Art. 10 – Technology
- Art. 13 – Enhanced Transparency
- Art. 15 – Implemt. & Compl. Mech.

The Paris Agreement

- **Art. 2 - 2°C limit**

- Art. 4 - NDCs

- Art. 5 – REDD+

- Art. 6

Imple

Mark

- Art. 7

- Art. 8



- Art. 9 – Financing

- Art. 10 – Technology

- Art. 13 – Enhanced Transparency

Hold “the increase in the global average temperature to well below 2 °C above pre-industrial levels” and “pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels”

The Paris Agreement

- Art. 2 - 2°C limit
- Art. 4 - NDCs
- Art. 5 – REDD+
- Art. 6 – Cooperative Implementation (ITMO - Markets?)
- Art. 7 – Adaptation
- Art. 8 – Loss & Damage

“Each Party shall prepare, communicate and maintain successive **nationally determined contributions** that it intends to achieve. “
(160 INDCs, covering 187 countries)

Fiji's Intended Nationally Determined Contribution

US

China

39

- With all ongoing efforts, reduce GHG emissions by 26-28% below 2005 levels by 2025 (Paris INDC)
 - With Clean Power Plan, reduce CO2 emissions from power sector by 32% below 2005 levels by 2030
- Peak carbon emissions by 2030
 - Lower CO2 emissions per unit GDP by 60-65% from 2005 levels by 2030 (Paris INDC)
 - Plan for nationwide GHG cap & trade system (based on 6 local pilot programs)

The Paris Agreement

- Art. 2 - 2°C limit
- Art. 4 - NDCs
- **Art. 5 – REDD+**
- Art. 6 – Cooperative Implementation (ITMO - Markets?)
- Art. 7 – Adaptation
- Art. 8 – Loss & Damage

□ Art. 9 – Financing

Parties are encouraged to take action to implement and support . . . the existing framework . . . For policy approaches and positive incentives for activities relating to **reducing emissions from deforestation and forest degradation**

transparency
impl.

UN-REDD
PROGRAMME



Food and Agriculture
Organization of the
United Nations



The Pa



- Art. 2 - 2
- Art. 4 - N
- Art. 5 – R
- Art. 6 – Cooperative Implementation (ITMO - Markets?)
- Art. 7 – Adaptation
- Art. 8 – Loss & Damage
- Art. 9 – Financing
- Art. 10 – Technology
- Art. 13 – Enhanced Transparency
- Art. 14 – Implemt. & Compl.

“use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement shall be voluntary and authorized by participating Parties”

The Paris Agreement

- Art. 2 - 2°C limit
- Art. 4 - NDCs
- Art. 5 – REDD+
- Art. 6 – Cooperative Implementation (ITMO - Markets?)
- **Art. 7 – Adaptation**
- Art. 8 – Loss & Damage



Mech.

“Each Party shall, as appropriate, engage in **adaptation planning processes** and the implementation of actions”

gy
Transparency
& Compl.

The Paris Agreement

- Art. 2 - 2°C limit
- Art. 4 - NDCs
- Art. 5 – REDD+
- Art. 6 – Cooperative Implementation (ITMO - Markets?)
- Art. 7 – Adaptation
- Art. 8 – Loss & Damage



□ Transparency
□ Impl.

The Paris Agreement

- Art. 2 - 2°C limit
- Art. 4 - NDCs
- Art. 5 – REDD+
- Art. 6 – Market-based approaches
- Art. 7 – Loss and Damage
- Art. 8 – Non-polluting sources
- Art. 9 – Financing
- Art. 10 – Technology
- Art. 13 – Enhanced Transparency



The Paris Agreement

- Art. 2 - 2°C limit
- Art. 4 - NDCs
- Art. 6 - Market-based mechanisms
- Art. 7 - Loss and Damage
- Art. 8 - DRR
- Art. 9 – Financing
- **Art. 10 – Technology**
- Art. 11 – Technology Framework
- Art. 12 – Transparency
- Art. 13 – Enhanced Transparency
- Art. 14 – Technology Framework
- Art. 15 – Implement. & Compl.
- Art. 16 – Dispute Settlement
- Art. 17 – Final Provisions
- Art. 18 – Final Provisions



The Paris Agreement

- Art. 2 “A mechanism to facilitate
- Art. 4 implementation of and
- Art. 5 promote compliance with .
- Art. 6 . . . this Agreement . . . shall
- Imple be expert-based and
- Mark facilitative in nature and
- Art. 7 function in a manner that is
- Art. 8 transparent, non-
- adversarial and non-
- punitive.”



arency
ol.

The

Each Party shall regularly provide the following information:

- Art. (a) A national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases. . . ;
- Art. (b) Information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4.

- Art. 9 – Financing
- Art. 10 – Technology
- **Art. 13 – Enhanced Transparency**
- Art. 15 – Implemt. & Compl.



UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Enhance



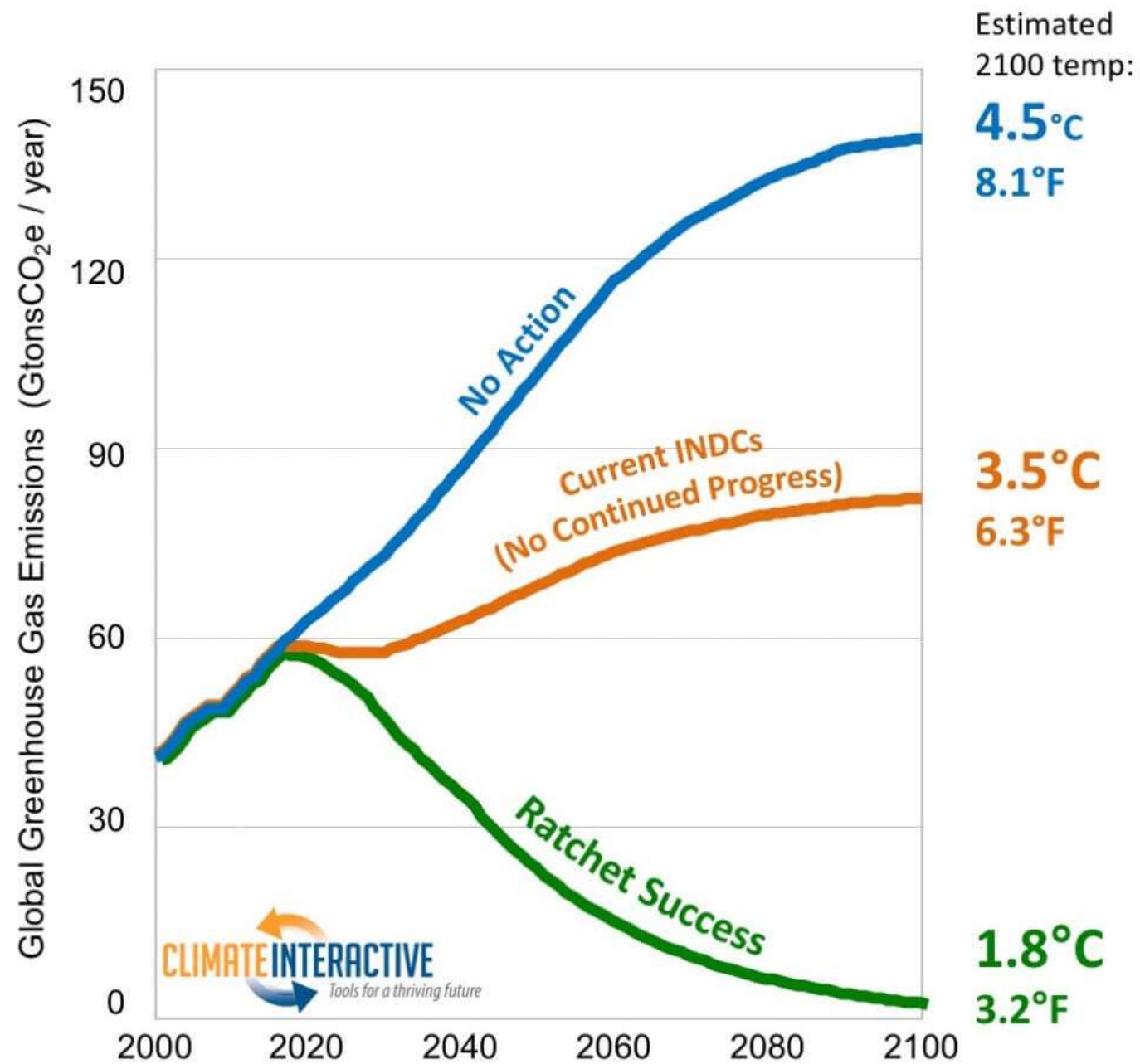
United Nations
Framework Convention on
Climate Change

UNITED NATIONS

1992



WHAT DOES IT MEAN?

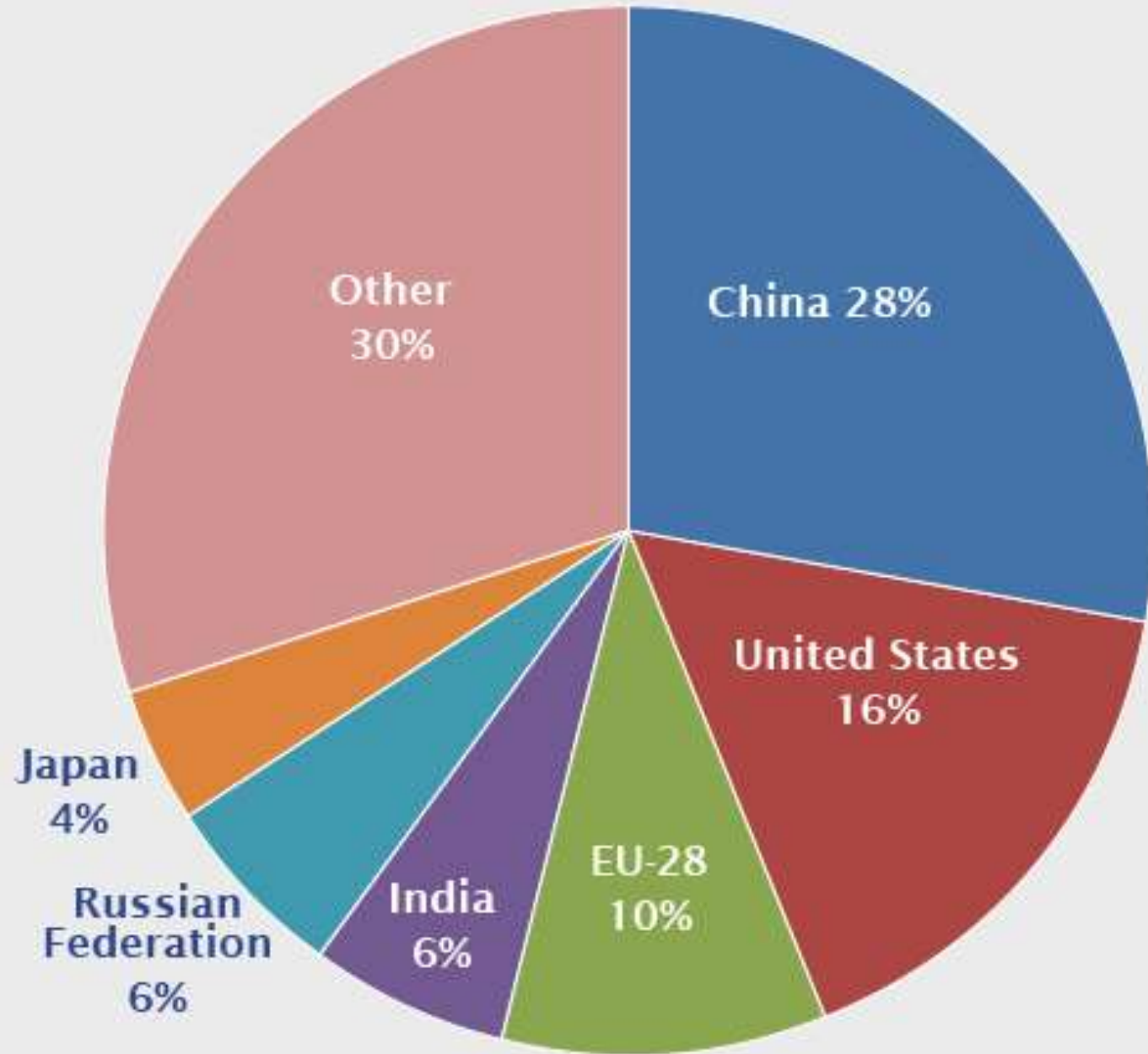






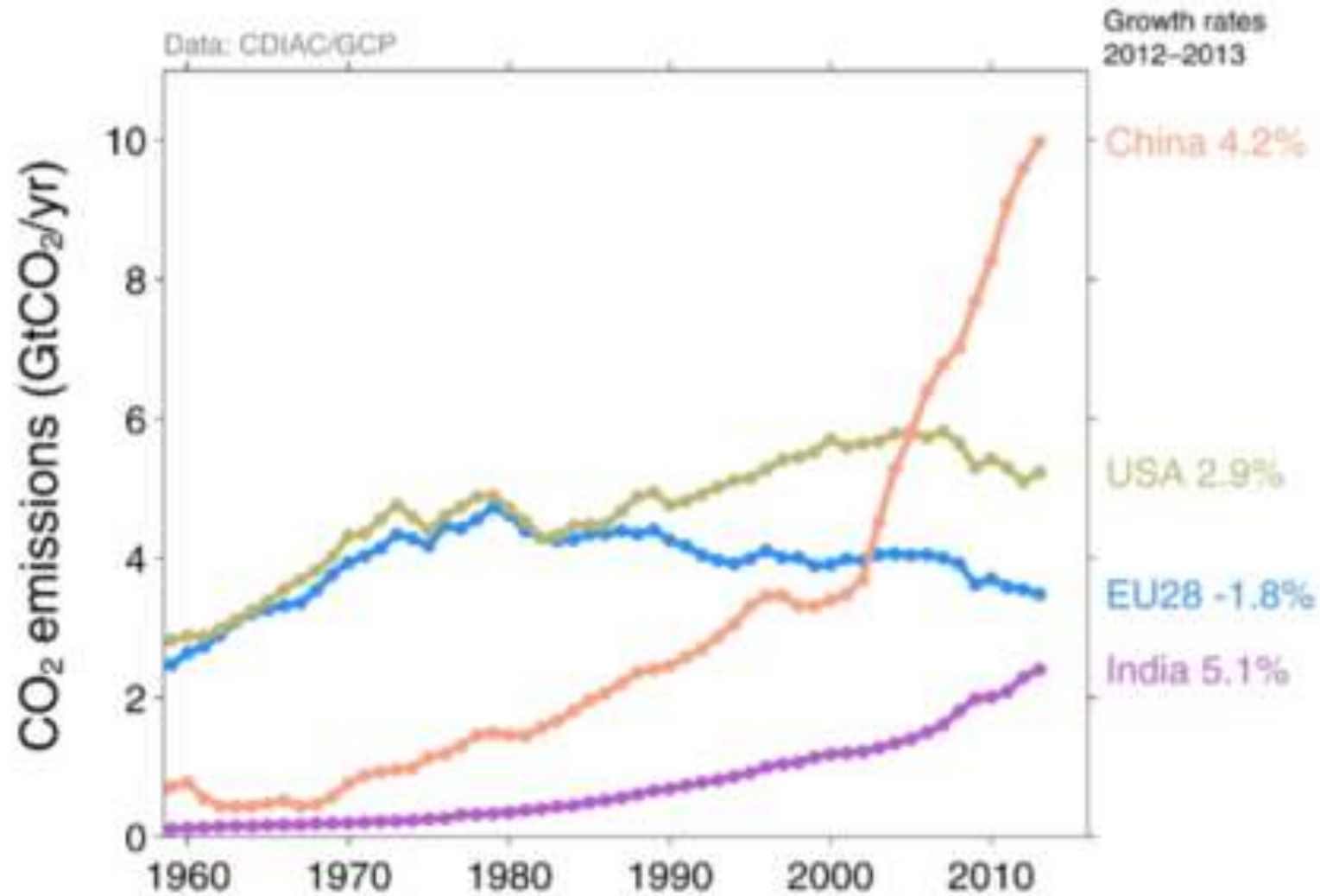
1. **Close to universal participation**
 - ▣ **Effectiveness of US Leadership**
2. **First Step toward effective national emission control measures**
 - ▣ **[US Climate Action]**





Source: EPA

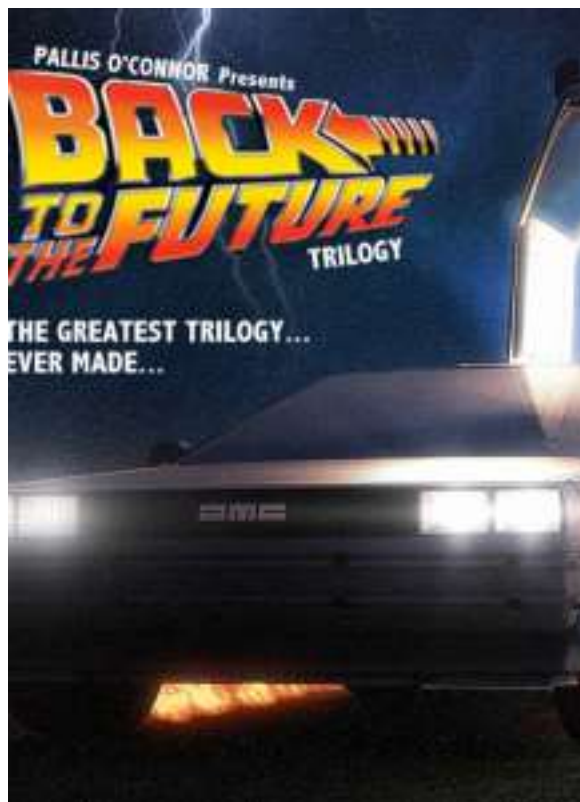
Figure 1: CO₂ emissions of China, US, EU, India (58% of global emissions)



Source: [Global Carbon Project](#).



WHAT IS AHEAD?



بروتوكول مونتريال بشأن المواد
المستنفدة لطبقة الأوزون

关于消耗臭氧层的物质的

蒙特利尔议定书

**MONTREAL PROTOCOL ON
SUBSTANCES THAT DEplete THE OZONE LAYER**

**PROTOCOLE DE MONTRÉAL RELATIF
À DES SUBSTANCES QUI APPAUVRISSENT
LA COUCHE D'OZONE**

**МОНРЕАЛЬСКИЙ ПРОТОКОЛ ПО
ВЕЩЕСТВАМ, РАЗРУШАЮЩИМ
ОЗОНОВЫЙ СЛОЙ**

**PROTOCOLO DE MONTREAL
RELATIVO A LAS SUSTANCIAS AGOTADORAS
DE LA CAPA DE OZONO**



Are the Climate Treaties Effective?

- How do we measure/evaluate effectiveness?
 - ▣ Effectiveness evaluates how well something accomplishes a set of goals
- What are the relevant Goals for the Climate Treaties?
- What are the Successes and Failures in Achieving those Goals?
- What were the Alternatives to the Treaty Regime, including Opportunity Costs?

What are the relevant Goals for the Climate Treaties?

- General/Abstract/Ideal?
 - ▣ Restore the Climate System?
 - ▣ Prevent Global Change?
- Treaty Text (preamble, specific statements, etc.)
 - ▣ Stabilization of Greenhouse Gas concentrations . . . at a level that . . . Prevents dangerous anthropogenic interference with the climate system
- “Underlying”/”real” goals
 - ▣ Create and Start a process for dealing with climate change
 - ▣ Provide a framework for long-term change
 - ▣ Change world-wide attitudes toward the problem

What are the Successes and Failures in Achieving those Goals?

- What are the Successes?
 - World-wide attention/consensus on problem
 - Process for Change has been initiated
 - Public attitudes, especially of businesses, have changed
- What are the Failures?
 - ▣ No actual emissions reductions have occurred, yet
 - ▣ In fact, GHG emissions have risen over the years since Kyoto
 - ▣ Hot air (e.g. Russia) may become a mechanism for meeting targets

What were the Alternatives to the Climate Treaty Regime, including Opportunity Costs?

- Alternative of No-Action seems unacceptable
- Could there have been a more stringent treaty (with stricter emissions reduction goals)?
- Could a greater focus on other approaches, e.g. technology, improving scientific certainty, have been more productive (rather focusing on emissions reductions)?
- Other international efforts more effective, e.g. bilateral efforts focused on the biggest GHG emitters? I.e. could a non-global set of agreements be more effective because of side-payments, etc.?

